

Date: Sun, 13 Feb 94 04:30:05 PST
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V94 #144
To: Info-Hams

Info-Hams Digest Sun, 13 Feb 94 Volume 94 : Issue 144

Today's Topics:

 Antenna Erection Aids
 ICOM IC-28 series mods needed
 Radar Detector Detectors
 Securing VXO coils, what glue?

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Tue, 08 Feb 94 16:30:11 GMT
From: netcon!bongo!skyld!jangus@locus.ucla.edu
Subject: Antenna Erection Aids
To: info-hams@ucsd.edu

In article <9402072116.AA02094@opus.xyplex.com> sasminkey@xap.xyplex.com writes:

> it from moving. Now tape a small rock to the end of the monofilament
> fishing line and fire away! Wait for the rock to drop then attach your
> wire or rope and reel in the monofilament line. Remember that a hunting
> slingshot can send a small stone a long ways so practice in a safe place.

Nothing like explaining to the neighbors when they notice that the new
hole in their window has a string leading right back to your hands...

Amateur: WA6FWI@WA6FWI.#SOCA.CA.USA.NA | "It is difficult to imagine our
Internet: jangus@skyld.tele.com | universe run by a single omni-

US Mail: PO Box 4425 Carson, CA 90749 | potent god. I see it more as a
Phone: 1 (310) 324-6080 | badly run corporation."

Date: Fri, 11 Feb 94 22:26:30 -0500
From: elroy.jpl.nasa.gov!swrinde!cs.utexas.edu!howland.reston.ans.net!
noc.near.net!news.delphi.com!usenet@ames.arpa
Subject: ICOM IC-28 series mods needed
To: info-hams@ucsd.edu

Gary following is a transmit mod for the Icom 28. A friend tried it
and it works.

By the way, the Icom 28 is very popular among the small fishing fleets
in California, as the transmit mod is very easy. Commerical fisherman
sometimes do a lot of bootlegging, in the hope that competing fleets
won't be listening in.

73 from Leigh/KM6JE in Santa Barbara.

==== BOYAN Log to Disk, 08/03/93 at 03:08 ====

Date: Tue, 08 Feb 94 16:33:38 GMT
From: netcon!bongo!skyld!jangus@locus.ucla.edu
Subject: Radar Detector Detectors
To: info-hams@ucsd.edu

In article <CKvFH9.FuC@srngenprp.sr.hp.com> alanb@sr.hp.com writes:

> It is certainly possible. Inexpensive radar detectors inject the
> unit's local oscillator signal directly into mixer located right in the
> waveguide antenna -- the "detector detector" operates by receiving the
> L.O. signal that leaks out the waveguide.

This is exactly what the Z-channel cops were doing to locate un-paid
"suscribers"

Amateur: WA6FWI@WA6FWI.#SOCA.CA.USA.NA | "It is difficult to imagine our
Internet: jangus@skyld.tele.com | universe run by a single omni-
US Mail: PO Box 4425 Carson, CA 90749 | potent god. I see it more as a
Phone: 1 (310) 324-6080 | badly run corporation."

Date: Wed, 9 Feb 1994 05:20:00 GMT
From: netcomsv!netcom.com!tgm@decwrl.dec.com
Subject: Securing VXO coils, what glue?
To: info-hams@ucsd.edu

asirene@ntuvax.ntu.ac.sg wrote:
: I am winding some coils for a VXO and want to know if
: the "glue-gun" melted plastic is suitable for securing the coil
: or if it is too lossy?

The classic solution is Q-dope made by dissolving polystyrene
in a solvent. Polystyrene is plentiful but I can't remember
the proper solvent. I made a gooey useless mess once when I
used a less than optimal solvent. Acetone should work.

Thomas

Date: Sat, 12 Feb 1994 16:19:57 GMT
From: library.ucla.edu!agate!howland.reston.ans.net!cs.utexas.edu!swrinde!emory!
kd4nc!ke4zv!gary@network.ucsd.edu
To: info-hams@ucsd.edu

References <CL1F5v.KID@srgenprp.sr.hp.com>, <2jg9ft\$8ds@hp-col.col.hp.com>,
<CL2Iuo.21A@news.direct.net>
Reply-To : gary@ke4zv.atl.ga.us (Gary Coffman)
Subject : Re: Vertical Antennas

In article <CL2Iuo.21A@news.direct.net> kg7bk@indirect.com (Cecil Moore) writes:
>Mike Stansberry (jms@col.hp.com) wrote:

>
>: : (Is anybody else still following this convoluted discussion?)
>: : AL N1AL
>
>: Yes, but you're both over my head. I still read it, though.
>: Mike, K0TER
>
>Would everybody (anybody) trust ELNEC to settle this discussion?

We're not arguing over *results*, we both agree on the patterns
so ELNEC wouldn't settle anything there. What we're discussing
is the most useful way to visualize what's happening in and around
the antenna from a "first principles" point of view. (At least I
am, I'm not sure Al is coming from the same direction.)

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: Sat, 12 Feb 1994 16:07:01 GMT
From: library.ucla.edu!agate!howland.reston.ans.net!europa.eng.gtefsd.com!emory!
kd4nc!ke4zv!gary@network.ucsd.edu
To: info-hams@ucsd.edu

References <CL0F1v.EzK.2@cs.cmu.edu>, <1994Feb11.003343.2956@ke4zv.atl.ga.us>,
<bote.760946660@access1>
Reply-To : gary@ke4zv.atl.ga.us (Gary Coffman)
Subject : Re: Medium range point-to-point digital links

In article <bote.760946660@access1> bote@access1.digex.net (John Boteler) writes:

>I have gotten a bug up my rear to configure our point-to-point
>repeater linking system with digital paths ranging 20
>to 40 miles apart.

>

>We currently use plain old analog audio Motorola MICOR
>UHF mobiles to do the linking between repeater sites,
>and they work well (naturally!). However, my calibrated ear
>frequently cringes at the minor white noise which
>accumulates over the multiple hop links, such as
>those which traverse 3 or 4 hops. By the time the
>signal gets to the fourth site, there is enough
>additive noise and minor equalization and level
>difference that I believe that digital transmission
>would provide superior performance.

>

>I am certain that I am not breaking new ground here.
>Has anyone played with this who could comment on
>how practical this would be?

Well lets look at some numbers and see. Lets assume
you want "broadcast" grade audio. That's a SNR of
50 db. Digital transmission regenerates bits so
that above a certain threshold level the effective
SNR is only the quantization error of the digital
equipment itself. A crude way of looking at this
is to consider this error as bit jitter at the lsb-1.
So an 8 bit system would have a SNR of $10 \times \log(2^9) = 27$ db.
That's obviously not good enough. 16 bits yields a SNR of
 $10 \times \log(2^{17}) = 51$ db which is close enough for our purposes.

Now the Nyquist limit says we have to sample at a minimum of twice the highest frequency in the audio. If we assume that's 5 kHz, then our minimum sample rate is 10 kilosamples per second. That requires a very good brickwall filter, however, so sampling is usually done at a somewhat higher rate, say 3X or 4X the highest audio frequency. Lets pick 3X. So our required bit rate is $16 \times 15,000 = 240$ kb/s. That's not going to fit in a normal FM two way radio bandwidth, so we're going to have to resort to trickery.

Codecs use various compression schemes to lower the effective bit rate. Delta modulation is one such trick, and LPC (linear predictive coding) is another. These are effective real time compression methods, but do suffer some artifacts. Or we can take a page from the newer high speed telephone modems and use LZW type on the fly lossless compression and complex modem encodings that use less than one baud per bit. Off the shelf modems can deliver up to 56 kb effective data throughput over voice grade channels using a base baud rate of 600 baud. That's not quite good enough though.

Or we can abandon voice grade radios for the links and use purpose built digital radios with higher baud rates. If we take a 56 kb WA4DSY RF modem (GRAPES), and couple that with an on the fly compression scheme like LZW, we can easily get the required 240 kb/s throughput for broadcast grade audio without dealing with the timing artifacts of delta modulation or LPC. Occupied bandwidth would be less than 70 kHz.

If we can settle for less than perfection, however, Motorola has a codec scheme that they claim can fit a digital voice signal in the same bandwidth as a NBFM voice signal, IE 20 KHz. It won't work through off the shelf FM radios though, a purpose built radio is required, and it won't yield "broadcast" SNRs. I have the write up on it around here somewhere, but can't lay my hands on it right now. I seem to recall that its an 8 bit system so the SNR is going to be around 27 db. It should be noted that hams consider the 20 db quieting level "full quieting" and thus perfectly acceptable audio quality.

>I just received a catalog from Consumer Microcircuits
>Ltd in the U.K. listing a CVSDM codec. I remember
>playing with these in electronics lab in college;
>would these provide a narrow enough digital signal
>to shove through a radio system designed for 5KC
>bandwidth given a band-limited audio input to the
>codec?

I don't know this codec. What are the specs? Note that typical telco "voice grade" codecs have a bit rate of around 16 kb/s by use of aggressive coding schemes. Using MSK methods, that could be transmitted in a 22.4 kHz channel. But they won't deliver the "broadcast" grade audio you apparently want.

>I don't recall if the output of such a codec would
>be transmittable over the air or would require
>a modem of some sort. If so, this might kill it.

Direct FSK is a bandwidth hog, so if the codec data rate is fairly high, some sort of modem scheme, such as the above mentioned telephone modems or the WA4DSY MSK design would be indicated. Naturally, straight AFSK used over a FM radio is even worse than direct FSK, and should be avoided at all costs unless the data rate is **really** low, say 1200 to 2400 b/s.

>Our link system currently consists of link repeaters
>serving a locale, linked to the next hub via a
>transciever located at that next hub site. I envision
>a digital system which could sync up rather quickly
>as the transceivers keyed up each time. I would rather
>not put up a full-duplex RF system just to keep
>the modems happy. I have lots more to tell but
>I'll shutup now.

The DSY RF modem will sync in 5 ms (depends on transverter TR time too) so it should work in a half duplex setup. That's better than the squelch response time of a typical FM voice radio. High performance phone modems need a training sequence, and that pretty much mandates full duplex full time links.

Gary

--

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Lawrenceville, GA 30244				

Date: Sat, 12 Feb 1994 16:02:39 GMT
From: library.ucla.edu!csulb.edu!csus.edu!netcom.com!slay@network.ucsd.edu
To: info-hams@ucsd.edu

References <slayCL0wC3.u0@netcom.com>, <2jg9js\$puv@news.acns.nwu.edu>,
<CL2roD.DGI@world.std.com>

Subject : Re: Looking for LOGIKEY keyer

Richard L Barnaby (barnaby@world.std.com) wrote:

: >The Logikey keyer also is sold by the same company: Idiom Press. Last

: >I saw in an ad, the price for Logikey was \$129 +s&H

: Is this an Iambic keyer or a regular keyer. I haven't used an iambic

: keyer (saw one once) but it seems like it'll take relearning.

: Is it worth it? Comments anyone?

Yep - just about all the keyers made over the past decade or two have been *capable* of iambic operation. However, if you have a non-iambic keyer paddle - they will still work. I prefer non-iambic myself, having started out on a bug many, many years ago. The Logikey/CMOS Super Keyer II is wonderful in either iambic or non-iambic operation (I have used both). Iambic DOES take relearning and involves much less wrist movement than non-iambic single lever paddles and is probably the way to go IF you are a newcomer to keyers. IF you learned on a bug and/or LIKE non-iambic keying - why bother to change?

73 de Sandy WA6BXH/7J1ABV slay@netcom.com

Date: Sat, 12 Feb 1994 16:30:48 GMT

From: library.ucla.edu!agate!howland.reston.ans.net!cs.utexas.edu!swrinde!emory!

kd4nc!ke4zv!gary@network.ucsd.edu

To: info-hams@ucsd.edu

References <OZ7MjGG8yHDE053yn@dorsai.dorsai.org>, <CKz4HD.9KD@srigenprp.sr.hp.com>,
<8299@gold.gvg.tek.com>4

Reply-To : gary@ke4zv.atl.ga.us (Gary Coffman)

Subject : Re: Golf Causes Cancer!

In article <8299@gold.gvg.tek.com> groverc@gvgadg.gvg.tek.com writes:

>

>It sounds as though Mark Twain was right when he described golf as

>

>"A good walk ruined."

>

>I wonder if just hanging around all those country club types

>could cause cancer.

Especially the high powered lawyers! The corona discharge off their egos would probably light a small city. :-)

Somehow though, I suspect the real major cause of death for golf pros is jealous husbands. :-)

Gary

--

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Date: Sat, 12 Feb 1994 16:10:53 GMT

From: library.ucla.edu!agate!howland.reston.ans.net!europa.eng.gtefsd.com!emory!
kd4nc!ke4zv!gary@network.ucsd.edu

To: info-hams@ucsd.edu

References <CKz3I8.6M4@news.Hawaii.Edu>, <1994Feb11.001239.2842@ke4zv.atl.ga.us>, <CL1p2x.8s2@news.Hawaii.Edu>

Reply-To : gary@ke4zv.atl.ga.us (Gary Coffman)

Subject : Re: 40 meter QRP (cw or ssb)

In article <CL1p2x.8s2@news.Hawaii.Edu> jherman@uhunix3.uhcc.Hawaii.Edu (Jeff Herman) writes:

>In article <1994Feb11.001239.2842@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary Coffman) writes:

>>I can wait and recognize "the", but when it turns out to be the

>>opening character group in "Thessalonian", I'm screwed. Dealing

>>character by character on paper insures I get either correctly.

>

>Geez Gary, what kind of QSOs do you have? In 18 years I've never had

>someone send that word to me; phooey - your QSOs sound MUCH more

>interesting than mine.

I've been claiming that all along, Jeff. The high information rate of voice transmission allows complex ideas to be expressed quickly enough to be interesting.

Gary

--

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End of Info-Hams Digest V94 #144

